January 5, 2001

TO: Columbia Mainstem TMDL Workshop Participants
Portland, OR
November 28, 2000

FROM: Mary Lou Soscia, EPA

Please find attached the presentation notes and list of attendees from the November 28, 2000, Columbia Mainstem TMDL Workshop.

Please contact me if you need further information.

We will continue to share information as the development of the TMDL progresses.

Jannine Jennings, EPA - Presentation Notes
November 28, 2000
Columbia Mainstem TMDL Workshop
Portland, OR

Total Maximum Daily Loads

Clean Water Act Section 303(d)

TMDL Program

- Statutory Basis
  - Clean Water Act ' 303(d)
- $ Regulatory Basis
  - 40 CFR Parts 130.2 and 130.7
- Two Primary Requirements
  - 303(d) Lists
  - Total maximum Daily Loads

Clean Water Act Requires

- $ States to identify waters not meeting water quality standards
- $ States to set priorities for TMDL development
- $ States to develop a TMDL for each pollutant for each listed water
- $ EPA to approve or disapprove State submissions, and if disapproved, to act in lieu of State

Implementation

- $ TMDLs set the stage for implementation
- $ Implementation tools vary:
  - NPDES permits for point sources
  - State nonpoint source management programs
  - Other federal laws and requirements, e.g., CZARA
  - State and local laws and ordinances
  - Local or regional watershed management programs

Why TMDLs are important

- $ Critical for achieving water quality standards
- $ Analytic underpinning for watershed decisions
- $ Lists track all impaired waters
- $ Can integrate solutions
- $ Opportunity for innovations

Water Quality Standards

- $ Beneficial uses
- $ Criteria to protect uses
- $ Antidegradation Policy

303(d) Lists

$ Lists identify

- Waters which do not or are not expected to meet water quality standards after implementation of required controls
- Pollutant(s) of concern
- Priority of ranking
- Takes into account the severity of the pollution and the uses of the water
- Waters targeted for TMDLs in next listing cycle

$ EPA

- Must review list submissions and approve/disapprove within 30 days
- If disapproved, EPA must identify the waters within 30 days of disapproval
- Will establish a list if State fails to do so

303(d) Lists

- 303(d) lists are required to be submitted on a biennial basis (since 1992)
- 303(d) lists identify waterbodies where WQS are violated by one or more pollutants
- Approximately 21,000 listed waters

What is a TMDL?

- The amount of a pollutant that a waterbody can receive and still meet water quality standards
- The sum of allowable loads from point and nonpoint sources, considers seasonal variation and includes a margin of safety
- Determines sources of pollutants causing or contributing to impairment
- Allocates responsibility for reductions needed to achieve water quality standards

303(d) Submittal Elements

- Implementation
- Allocation
- Monitoring
- Linkage Between Pollutant Loading and In-Stream Response
- Pollutant Source Analysis
- TMDL Numeric
- Targets
- Problem Identification

1. TMDL Elements and Analysis Considerations

I. Define the problem (watershed characterization) and identify the pollutant for which the TMDL will be established

II. Define numeric targets for pollutants (indicators) that represent achievement of WQS

III. Identify sources and evaluate pollutant loadings

Examine impacts on receiving waters and quantify the loading capacity (amount of load that can be assimilated without violating water quality standards)

IV Evaluate the linkage between pollutant loading and instream response

V. Select the pollutant allocation (including MOS) that results in the achievement of water quality standards

VI. Identify follow-up monitoring needs

VII. Include implementation plans with nonpoint source TMDL submittals (Perciasepe memorandum ANew Policies for Establishing and Implementing TMDLs@ August 8, 1997).

Richard Parkin, EPA - Presentation Notes
November 28, 2000
Columbia/Snake River Temperature TMDL

1. SCOPE OF TMDL

Columbia River from the Canadian border (RM 745.0) to the Pacific Ocean.

Snake River from it's confluence with the Salmon River (RM 188) to it's confluence with the Columbia River (Snake RM 0, Columbia RM 324.3).

2. State TMDL Schedules:

Idaho
- 2001 Brownlee Reservoir, Hells Canyon
- 2005 Lower Snake/Asotin

Oregon
- 2001 Columbia River
- 2007 Snake River

Washington
- TMDLs to be completed by 2014

3. State and Tribal Agencies with CWA responsibilities/authorities in Project Area :
- Colville Confederated Tribes
- Idaho Department of Environmental Quality
- Oregon Department of Environmental Quality
- Spokane Tribe of Indians
- Washington Department of Ecology

4. Columbia/Snake River 303(d) Listings for Temperature

Listed by Oregon and Washington

Columbia River RM 0 to RM 309.3 from the Pacific Ocean along the Washington/Oregon border is currently listed as water quality impaired for temperature on both the Washington and Oregon 303(d) Lists.

Snake River from it's confluence with the Salmon River to it's confluence with the Columbia River is listed as water-quality impaired for temperature on the Washington, Idaho and/or Oregon 303(d) Lists.

Listed by Washington

The Columbia River RM 545.1 to RM 745.0 from Chief Joseph Dam to the Canadian Border is listed as water-quality impaired for temperature by the State of Washington.

Not listed by any State or Tribe

The segment of the Columbia River between the Washington/Oregon border and Chief Joseph Dam is currently not listed for temperature.
There is currently no 303(d) list for waters of the Colville or Spokane Indian reservations.

4. W**ater Quality Standards for the Columbia/Snake River**

APPLICABLE IDAHO WATER QUALITY CRITERIA

Snake River

Idaho water quality standards are applicable for the reach of the Snake River from the confluence of the Salmon River (RM 188) to the Idaho/Washington border near Clarkston, Washington (RM 168).

> "Waters designated for cold water biota are to exhibit the following characteristics: ... Water temperatures of twenty-two (22) degrees C or less with a maximum daily average of no greater than nineteen (19) degrees C."

APPLICABLE OREGON WATER QUALITY CRITERIA

Columbia River

Oregon water quality standards are applicable to the Columbia River between the Washington/Oregon border (RM 309.3) and the Pacific Ocean.

> ".... no measurable surface water temperature increase resulting from anthropogenic activities is allowed in the Columbia River or its associated sloughs and channels from the mouth to river mile 309 when surface water temperatures exceed 68.0°F (20.0°C)."

The numeric temperature criteria are measured as the seven-day moving average of the daily maximum temperatures. If there is insufficient data to establish a seven-day average of maximum temperatures, the numeric criteria is applied as an instantaneous maximum. A measurable surface water temperature increase is defined as 0.25°F (0.15°F). Anthropogenic is defined to mean that which results from human activity.

Snake River

Oregon water quality standards are applicable to the Snake River between it's confluence with the Salmon River (RM 188) and the Washington/Oregon border (RM 176).

> ".... no measurable surface water temperature increase resulting from anthropogenic activities is allowed:
>
> (i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);
>
> (ii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C)"

The period of year designated by the Oregon Department of Environmental Quality for the protection of salmonid spawning, egg incubation and fry emergence in this area is October 1 through June 30.

The numeric temperature criteria are measured as the seven-day moving average of the daily maximum temperatures. If there is insufficient data to establish a seven-day average of maximum temperatures, the numeric criteria is applied as an instantaneous maximum. A

measurable surface water temperature increase is defined as 0.25°F (0.15°F). Anthropogenic is defined to mean that which results from human activity.

APPLICABLE WASHINGTON WATER QUALITY STANDARDS

Columbia River

Canadian border to Grand Coulee Dam is:

> The temperature shall not exceed 16.0°C (60.8°F) due to human activities. When natural conditions exceed 16.0°C (60.8°F), no temperature increases will be allowed which will raise the receiving water temperature by greater than 0.3°C (0.5°F).

Grand Coulee Dam to Priest Rapids Dam is:

> The temperature shall not exceed 18.0°C (64.4°F) due to human activities. When natural conditions exceed 18.0°C (64.4°F), no temperature increases will be allowed which will raise the receiving water temperature by greater than 0.3°C (0.5°F).

Priest Rapids Dam to the Washington/Oregon border is:

> The temperature shall not exceed 20.0°C (68°F) due to human activities. When natural conditions exceed 20.0°C (68°F), no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3°C (0.5°F) nor shall such temperature increase, at any time, exceed $t=34/(T+9)$.

Columbia River

Washington/Oregon border to the Pacific Ocean is:

> The temperature shall not exceed 20.0°C (68°F) due to human activities. When natural conditions exceed 20.0°C (68°F), no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3°C (0.5°F) nor shall such temperature increases, at any time, exceed 0.3°C (0.5°F) due to a single source or 1.1°C (2.0°F) due to all such activities combined.

Snake River

Washington/Oregon border to the Clearwater River:

> The temperature shall not exceed 20.0°C (68°F) due to human activities. When natural conditions exceed 20.0°C (68°F), no temperature increases will be allowed which will raise the receiving water temperature by greater than 0.3°C (0.5°F) nor shall such temperature increases, at any time, exceed 0.3°C (0.5°F) due to any single source or 1.1°C (2.0°F) due to all such activities combined.

Clearwater River to the confluence with the Columbia River:

> The temperature shall not exceed 20.0°C (68°F) due to human activities. When natural conditions exceed 20.0°C (68°F), no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3°C (0.5°F) nor shall such temperature increases, at any time, exceed $t=34/(T+9)$.

APPLICABLE WATER QUALITY CRITERIA FOR THE COLVILLE CONFEDERATED TRIBES

On July 6, 1989 EPA promulgated Water Quality Standards for the Colville Indian Reservation.

Columbia River and Lake Roosevelt

No specific stream classification is provided for the Columbia River. Therefore, a classification of Class II applies. The temperature criteria applicable to a Class II water is:

> The temperature shall not exceed 18.0 degrees C due to human activities. Temperature increases shall not, at any time, exceed t=28/(T+7).
>
> When natural conditions exceed 18 degrees C no temperature increases will be allowed which will raise the receiving water temperature by greater than 0.3 degrees C.

For purposes of the above criteria, "t" represents the permissible temperature change across the dilution zone; and "T" represents the highest existing temperature in this water classification outside of any dilution zone.

APPLICABLE WATER QUALITY CRITERIA FOR WATERS OF THE SPOKANE INDIAN RESERVATION

The Spokane Tribe of Indians has recently adopted, under Tribal law, surface water quality standards for reservation waters. They have also submitted a TAS application to EPA requesting authorization for the Water Quality Standards Program. It is expected that their TAS application and water quality standards will be approved prior to the completion of this TMDL. The following reflects the water quality standards adopted by the Spokane Tribe of Indians by Tribal Resolution 2000-257 on June 19, 2000.

Columbia River (Lake Roosevelt)

> Water used for spawning or rearing by naturalized populations of indigenous salmon or trout -
>
> Not to exceed a 7-day average of the daily maximum temperature values greater than 16.5°C (61.7°F) from June 1 to September 1, with no single daily maximum temperature exceeding 21°C (69.8°F).
>
> Not to exceed a 7-day average of the daily maximum temperature values greater than 13.5°C (56.3°F) between September 1 and October 1 and between April 1 and June 1, and not to exceed 11°C (51.8°F) from October 1 to April 1; with no single daily maximum temperature exceeding 18.5°C (65.3°F).
>
> Exception for Non-Anadromous Rainbow and Redband Trout. In waters where the only salmonid present is non-anadromous form of naturalized rainbow or Redband Trout.

Temperatures from June 1 to September 1 may be allowed to reach a 7-day average of the daily maximum temperatures of 18.5°C (65.3°F), with no single daily maximum greater than 24°C (75.2°F).

SOURCE IDENTIFICATION

Point Sources

- Dams - 10 federal, 5 Private
- NPDES Facilities - Washington 80
  Oregon 63
  Idaho 1-5
- Municipal Stormwater - 5 urbanized areas

Nonpoint Sources

- Tributaries
- Transportation corridors
- Dikes
- Development

COLUMBIA/SNAKE MAINSTEM TMDL WORKSHOP
November 28, 2000

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